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Towards a new measurement of the neutron electric dipole moment at the Paul Scherrer Institute

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The quest for a non-zero electric dipole moment (EDM) in a non-degenerate system such as the neutron is a powerful way to search for physics beyond the standard model in the CP violation framework, complementary to LHC based experiments. So far, no evidence for such an intrinsic property was observed, neither for the neutron nor for any other system. After a long and successful data taking at the ILL, where the best upper limit on the neutron EDM was established in 2006, the RAL/Sussex/ILL apparatus was moved to PSI in 2009. It was upgraded and used by a collaboration of 15 institutions until late 2017. The collected data set represents the most sensitive one and has been also used to search for axion-like particles. I will discuss some of the most recent developments and their impact on both the sensitivity and the control of the systematic effects.

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